ERIC Document Resume	See Instruction Sheet	DATE OF RESUME	DATE RECEIVED

A. PUBLICATION DATA

1. ERIC NUMBER	2. ORIGINATOR CONTROL NO(S).	3. IDENTIFICATION NO.
ED001347	N.A.	N.A.

4. AUTHOR(S):
The Sutherlin Program

5. TITLE OF DOCUMENT ABSTRACTED:
Idea Inventory in Teaching the Creative

6. PUBLICATION TITLE:
N.A.

7. EDITOR(S):
N.A.

8. PLACE OF ORIGIN
ORG. The Sutherlin Program
ST.
CITY, STATE
TELE. EXT.
INST/LOC CODE

9. PUBLISHER OR SOURCE
The Sutherlin Program

10. VOL.	11. PAGES	12. MO./YR.	13. TOTAL PP.
N.A.	N.A.	5/64	35

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TYPE OF REPORT
PROPOSAL ☐
IN-PROGRESS ☐
FINAL ☒
FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR
teachers guide

16. INDEXING TERMS (6-12)

creativity	evaluation factor	secondary level	self-concept
adventurous thinking	kindergarten	instructional materials	
respect factor	primary level	teachers' role	
		individuality	childrens attitudes

17. ABSTRACT (MAX. 250 WORDS)

Five principles for encouraging creative thinking are to treat questions with respect, to treat imaginative ideas with respect, to show pupils that their ideas have value, to permit pupils occasionally to do something for fun or practice without threat of evaluation, and to tie in evaluation with cause and consequences.

Dr. E. Paul Torrance's "Ten Ways of Helping Young Children Gifted in Creative Writing and Speech" suggests that the teacher should provide materials which develop imagination, encourage children to record their ideas, accept the child's natural tendency to take a different look, and love them and let them know it.

In grades seven to twelve, teachers should attempt to enrich the student's sensitivity to the world about him and to other people, have the student read well and widely, and provoke him to learn by the use of leading questions.

ERIC No.

18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION	20. DIVISION OR DEPT.	21. CONTRACT NO. / PROJECT NO.
	22. TOTAL COST OF PROJECT	
	23. DURATION OR PROJECT	U.S. Department of Health, Education, and Welfare Office of Education

ERIC Form 1

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ED001347

Idea Inventory in Teaching the CREATIVE

the atmosphere needed...the approach...the specific ideas: experimental and concrete ...some sample results...

The Sutherlin Program

May, 1964

* *

20th Century

Dear Teacher and Principal,

I am a creative student. (Maybe I don't know this but I tell you in many different ways.)

There are times when things never seem to go right for me. I have an idea in class and my classmates call the idea "crazy." I give an answer which seems different than those of other students but the teacher tells me I'm wrong and won't let me argue my point. She says; "I go by the answer-book and your answer isn't here." Maybe my answer wasn't so hot but I'd like a chance to defend it and maybe the teacher could show me where it's wrong.

When I'm on the playground, my ideas are still called "crazy" and some of the students seem disturbed when I'm around them.

On days when everything seems to go wrong, I sometimes get irritated and I do something bad. That's why I get sent to the office. Other times I try to do as the other kids do and give the answer just as it is in the book. But when I get different ideas, it's very hard not to have anyone at all to share them with (even my mom and dad tell me I get "silly" ideas). Still other days when I can't get rid of my thoughts, I just sit in the class and daydream and think. I think they call that withdrawing. Maybe that's the best way if people expect me to be just like the rest.

I notice that teachers and principals give a lot of attention to the very intelligent boys and girls and they show a lot of sympathy toward the girl or boy who isn't very bright. Why can't they give me a little attention once in awhile? It seems to me that it has been new ideas which have made our country great. Do they want everyone to be exactly the same?

I wonder why?

Yours,

Johnny Idea

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WHAT IS CREATIVITY?

Dr. Taylor:

"The ability to RESTRUCTURE what we already THINK we know."

and he adds:

"Anyone who insists on a final definition isn't going to get started on research or if possible let anyone else start."

Sir Frederick Bartlett:

"Creativity is adventurous thinking. It is getting away from the main track, breaking out of the mold, being open to experience and permitting one thing to lead to another."

HOW IS IT NURTURED?

The Teacher:

First and foremost in encouraging the creative student is to match him with the creative teacher. Wonders can sometimes happen in this combination. If a second choice is to be made place the creative child in the hands of a kind and understanding teacher and/or a teacher who is acquainted with the special niche of the creative student. A helpful added ingredient is the administrator in sympathy and with understanding of the problems of this group of students.

The approach:

First of all, remove the potential of embarrassment.

Second, methods and approaches are of the highest in fostering creativity when they:

1. Allow ambiguity -- with alternate solutions and range of possibilities.
2. Don't necessarily evaluate.
3. Stretch imagination and increase problem solving ability.
4. Encourage thoughts of unusual associations among things.
5. Demonstrate choice of solutions when deciding a course of action.
6. Show that unrestricted use of imagination is often vital to solving problems.
7. Allow individual project time.
8. Reward and motivate the above 7 approaches.

Dr. Torrance gives these five principles for rewarding creative thinking:

1. Treat questions with respect.
2. Treat imaginative ideas with respect.
3. Show pupils their ideas have value.
4. Permit pupils occasionally to do something "for fun" or "for practice" without threat of evaluation.
5. Tie in evaluation with causes and consequences.

THE RIGHT CLIMATE

What do we need for fostering creativity:

EXPERIENCES -- ATMOSPHERE -- TIME -- OPPORTUNITY -- SPACE

We can't say:

"Students, create!"

The teacher is the guide, the director, the counselor who iniates the activity and helps it forward by her actions. She may stimulate by asking questions or she may pose the problems. The creativity is the unique way in which the student or class solves it.

The role of the teacher is not like that of the conductor of an orchestra who gives the signal for each instrument to play. Nor is it the role of sentry standing guard lest someone disturb the king. Each of these is the enemy of creativity.

The role of the teacher is that of being aware of each student's abilities and interests. For in a classroom with creative permissiveness, the teacher has confidence and trust in each student's capability of creating. When and if the student needs a bit of help he will turn to the teacher because this teacher has earned his trust and respect. If we encourage the faltering flights to inventiveness; if we praise the primitive beauty of the young artist's work; if we give an honest appraisal when the student is wanting our criticism, then we are fostering creativity.

. . . Jeraldine Hill

Jane Franseth of the U.S. Department of education declares a need for education to change from its "closed" system to an "open" system that accepts uniqueness in perception and thinking and provides opportunities for a wide range of individual differences. What is needed to promote creativity, she says, is the kind of education which avoids repetition and drill and does not insist on high marks when those marks depend only on ability to give single acceptable answers to objective questions.

- * -

Use anything to:

stretch imagination and increase problem solving ability.
help recognize ability to produce ideas.
encourage thinking of unusual associations among things.
demonstrate choice of solutions when deciding course of action.
show that unrestricted use of imagination is vital when solving problems.

A SUMMARY OF GENERAL METHODS

The following bulletin was issued to all teachers involved in the Sutherlin Program for Creativity and perhaps gives the best compositive overview of methods and procedures needed to reach the creative student.

To those involved in creative student program:

As we have proceeded with class groupings, many fine ideas have been developed, discovered in research and passed on for use.

Recently (thanks to Mr. Yurk, who found the material) I encountered perhaps the very best summary of what the teacher of a creative class can best do to help these particular youngsters. I pass this along to you for (1) further ideas of differing your classroom procedures for creative classes: (2) a judgment of your present classroom environment and techniques used with these classes.

The following comes from Research Report (1964) published by SRA:

1. Pay attention to the student's ideas no matter how unusual, ridiculous, or fantastic they seem to be. The creative person's original ideas, insight, and flexibility often come from his openness to feelings and intuitive impressions that some might dismiss as fantastic.

2. Encourage him to ask unusual or even unanswerable questions, and be respectful of these questions. The creative child has a strong urge to explore and to test out his ideas, and he needs help in doing this. Often he asks questions that help him to crystallize a new idea, tests it out, or modifies it, he wants to tell someone about it. If he is discouraged or laughed at by classmates because of his ideas, he may stop trying to communicate.

3. Encourage him to think of himself as a creator of ideas, not just a passive observer, and see that his creative ability is recognized. Research workers often emphasize that creative behavior must be rewarded and appreciated in some way if it is to flourish. Having someone notice his talent at the right time and finding someone who gives him an opportunity to use it may make the difference between the suppression or development of the creative person's ability. Children should also be encouraged to appreciate the creative efforts of others and to value all creative activity.

4. Respect his creative efforts and show him they are of value even if they are rough or unfinished. Such efforts, for example, cannot always be evaluated on the basis of reading and writing skills, because some creative children may have fallen behind their classmates in these areas. Until these skills can be improved, some opportunities should be provided for oral creative work. When a teacher in a classroom competitively ranks the products of one student against another and hands out approval or rewards measured by some fixed scale of evaluation rather than in terms of whether the student has realized his own inner potential, then the teacher is contributing to the kind of classroom climate that is damaging to creative development.

5. Provide opportunities for self-initiated learning and even for attempting tasks that seem too difficult. Studies indicate that many young children can start learning before the so-called readiness period. Children with creative abilities often want to try a very hard project and they should not be stopped from trying. If the project does not turn out perfectly, teachers should not criticize prematurely but should give the student a chance to make his own mistakes and to learn from them.

6. Try to establish a classroom climate in which each student feels a sense of security and freedom. Whenever a teacher, parent, or other person feels that an individual is of worth in his own right, he is fostering creativity. This kind of attitude can probably be genuine only when the teacher or other person senses the potential of the student and is able to have an unconditional faith in him no matter what his present state. Such a teacher will be understanding of divergent thinking. Creative people are highly sensitive and often easily disturbed. Young people will need encouragement and help in understanding themselves, particularly if they seem different from their peers. The wise teacher can provide a refuge.

7. Try to provide time for children to reflect quietly on ideas or on what their experiences mean. The "busyness" that characterizes the schedule of the American child is a block to creativity. In modern America many children are caught up in a rush of activities (usually organized) that leave them little time for thinking or creative pursuits. There is also an overemphasis on status and popularity as against creative activities and on product rather than process orientation. As children progress through school they usually become more and more concerned about conformity to peer pressures, which discourages creative thinking.

8. Help the creative child learn how to get along with others and how to use his creativity in his relations with people as well as in learning and working. This can be done without teaching him to suppress his individuality, or to give up the creative traits that make him different. He can be encouraged to be independent in judgment without being hostile, to work on his own without being withdrawn, and to be honest and open without being unpleasantly critical. His sensitivity, if used constructively, can make him compassionate and thoughtful of others because he can enter imaginatively into their experiences and share their feelings. The creative child should be taught how to use his insight to be understanding and appreciative of other people's problems.

9. Parnes, as a result of his work with older students, has evolved what he calls "creative calisthenics" for children. For example, when a child asks how to do something, the question can be turned around so that the child must do the thinking and searching. "How do <u>you</u> think we should do it?" is an example. A favorite game of Parnes, to use with children, if "What Would You Do If--?" For instance, he asks, "What would you do if we moved to Alaska?" or "What would you do if you came home from school and all the doors were locked?" Another favorite of his is to present mythical situations to children and let them make creative suggestions. Parnes believes that children receive so much spoon-feeding in modern society

that most of them lack opportunities for being creative. How-to-do-it instructions accompany every project and product. Teachers can learn to stimulate thinking and acting that call for initiative and creativity.

10. List every idea you can think of that might stimulate creative development in your students. Don't evaluate the ideas, but defer judgment until after you have listed a great variety of alternatives, go back and select the ideas that seem to have the most potential. Refine and develop these selected ideas into a plan of action and begin to apply this plan for your students.

11. Finally, in encouraging creativity it is important for the teacher, counselor, or any other adult to set an example of creative behavior. No two persons will provide the same kind of example; each will set an example in his own way. The person need not have outstanding talents in art, music, writing, or science. However, if he sustains his aliveness and openness to experience, his interest in people and things, his delight with new ideas, his excitement in learning, and his courage and independence of judgment, then his relations with young people will stimulate them to develop their creative abilities and to make the best of themselves. Education and learning will be directed toward creativity.

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IDEAS FOR THE YOUNG

K-6

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Dr. E. Paul Torrance's "Ten Ways of helping Young Children Gifted in Creative Writing and Speech:" (many of which will apply to all areas)

1. Provide materials which develop imagination.
2. Provide materials which enrich imagery.
3. Permit time for thinking and daydreaming.
4. Encourage children to record their ideas.
5. Give children's writings some concrete embodiment.
6. Accept the child's natural tendency to take a different look.
7. Prize rather than punish true individuality.
8. Be cautious about editing children's writings.
9. Encourage children to play with words.
10. Love them and let them know it.

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IDEA INVENTORY

The following idea inventory for students in grades 1-6 is largely dependent upon a list compiled by Robert Phillips, Dena DeKorte and Pearl Farnsworth of the Medford school district and used in their fine publication "Creativity and the Classroom." Where other ideas have been inserted from other sources, authorship has been noted.

Language Arts

In creative writing the emphasis should be on freedom, unusual expression, experimentation and original thought. Remember misplaced emphasis upon mechanics and a teacher demand for a nearly perfect copy in the first draft are two of the biggest reasons for trite and colorless writing. Remember also, good writing comes only when the child feels an urge to express himself. (Sally Ross)

1. Discuss magazine pictures which have been mounted on construction paper. Pass them around and when anyone finds one which interests him, let him keep it for a nucleus for his story.

2. Place several objects on the desk in front of the class. Suggest that the class might like to invent a chain story - one person telling a little, and then letting someone else go on weaving the objects into the plot.

3. The "open-end" story - A type of story teachers may compose from incidents reported in newspapers or magazines. Children are invited to write an ending to the story or are requested to write letters telling what they thought should be done about the situation.

4. Collect cartoon pictures and cut off the captions. Let the children write their own captions. Variation: Block out the conversation and let the children write their own version.

5. Writing a story from descriptive phrases

Directions: Today I am putting a list of word pictures on this paper (or on the board). I would like you to write a story using three of them. Choose any three, or more, from the list and make up a story. (Possible addition- children might close their eyes as teacher reads phrases with expression emphasis and urging students to "feel" the phrases.)

Suggested list (1)

mysterious box	yelling crowd	rocky shore
singing arrow	abandoned mine	tempting smell
high-fenced yard	stormy sea	broken window
smoke of signal fire	faithful horse	strange music

Suggested list (2)

prancing stallion	daring forest ranger	hidden package
rushing river	blood brother	unexpected guest
towering mountain	smoldering campfire	deep canyon
mangy dog	surprise party	muddy trail

. . . Ross

6. Post an advertisement. Have your class write a critical opinion of it (pro and con).

7. Read and discuss riddles. Children are then asked to write one of their own.

8. Take the letters that spell the name of a holiday. Write about something that each letter might stand for.

9. Occasionally have your class write what they like or dislike about school.

10. For the child who is yet to feel, we must provide experiences before we can hope for much expression. A delicious smell is coming from the cafeteria. How can we tell someone else what it is like? How do we describe smoke coming from a high stack? The design of a row of roofs? For these children let's have more saying time.

11. In spelling, prepare a booklet of word origins, hunting for strange and interesting words, and determining their significance to people.

12. Encourage the child to "be" someone or something else. Pantomine games, acting out stories and puppets are ways for children to perceive.

. . . Henry W. Howard

13. Write character sketches.

14. A single word can give a child an idea for a story. Write a number of words, each on an individual slip of paper. Sample words are:

a. Tiger
b. Blizzard
c. Peace

Drop the words into a bowl. The children draw from the container at random, and each child writes a story or a poem about the word he draws.

15. Most record shops have sound-effect records that provide marvelous stimuli for creative writing.

16. "The Box of Feels". Things in the box change ever so frequently. No one is allowed to remove the lid unless he has first put on a blind fold. (It might be an old Halloween mask.) Interesting stories can be written about the feel of things.

17. Prepare story sheets with titles and lots of space for illustrations.

Here are some starters for stories:

a. If I Could Invent
b. If I Hibernated
c. If I Followed an Ant

18. Make up new endings to familiar stories.

. . . Howard

19. Write an interview between a character in the book and the author, between you and the author, between you and a character in the book.

. . . Maureen Applegate

20. Make a hand-rolled movie about the book you have read.

. . . ibid

21. Write your book report in verse.

. . . ibid

22. Dr. R. E. Myers of the University of Oregon, who formerly worked with Dr. Torrance, has an outstanding group of tapes for creative development within the area of literature and human understanding.

23. While typical of many classrooms, this list of questions to stimulate creative reading is offered: (1) From the name of the story, what do you think it will be like? (2) What experiences do you think the characters will have? (3) Do you think this will be a funny story, a sad story, a make-believe story or an exciting story? Why? (4) What do you think the characters will be like?

. . . Josephine Shotka

Music and Art

1. Making musical instruments is one creative project that is particularly interesting to elementary school children. Each child presents his instrument and tells how it was made and why certain features were employed.

2. Composing original songs is another activity with strong appeal. In preparing for the composition of a song, much initial poem construction is needed.

3. Illustrating a recording through the uses of various art media.

4. Have your class draw and exchange pictures about trips, hobbies or other subjects that interest them. Each writes a story to go with the picture he gets. Interesting discussions can also be based on this activity.

5. Children draw a rainbow at the top of their writing paper. The rainbow should include all of the primary colors plus some of the other popular hues. You then ask the children each to write a short paragraph telling how they feel about each color, and why a certain color is their favorite.

6. Pass out or exhibit examples of modern abstract art. Let your children write what ideas and thoughts one of the pictures gave them.

7. Display inanimate objects such as a doughnut, a flag, an apple, a leaf. Let children pretend to be one of these and write how they might feel if they were that object.

8. Make ink-blot designs on paper (about 6" x 4½"). Staple each ink-blot to a sheet of lined paper. Work with the class on interpreting some of the blots, then let each child write about what he visualized as he examines one.

9. Have a child see and mimic a variety of dances on T.V., after which the child is asked to dance freely to a variety of recorded music.

10. Make a calendar of the months with a design or original drawing for each month.

Science and Mathematics

1. Provide a science table (change regularly) which is more than a display table. Leading questions, direction cards and demonstrations provided by the teacher lead children to seek answers. Prepare and leave on the table a booklet that has space for individuals to write their discoveries and sign their names. Name it a "Science Discoveries" book. Let children examine items on the science table and voice their hunches about properties, functions, structure or origin before reading for verification.

2. Encourage children to discover answers to problems and extend their concepts as they set up experiments for research. They may record their discoveries in picture or chart form.

3. Have the children draw a picture of a machine that will do a job they don't like to do, and write a story about the machine.

4. Let a group dismantle a clock or a mechanical toy. After a thorough examination period, ask the group to write what they have observed and noticed.

5. Rub balloons with different materials to learn about electricity.

6. Create a new number system using conventional symbols or make up original symbols.

7. Answer questions in a "What Does it Really Mean to You" booklet.
   a. A million
   b. A mile
   c. A dollar
   d. Freedom
   e. Family

8. How to make a gallon.
   a. Illustrate ways to get a gallon of liquid, using small measures and large measures.
   b. Draw something which people purchase by the gallon.

9. Develop an individual book of original problems.

10. Prepare and make reports on money of other countries.

11. Analyze the school building in terms of dimensions.

12. Make calculations relative to beginning astronomy and space studies.

13. Construct and play number puzzles and games.

14. Provide all the necessary data in a paragraph or two and have the children make up problems using this data.

15. On a rainy day, ask children what "wetness" is. Ask them, "Can you touch it? Feel it? What are the scientific facts we know about wetness? Could you paint wetness? (Art)

16. Provide a box of simple toys that will illustrate some scientific principle. Instruct the student to think of as many things as he can that these toys can do and explain them. Do not give up when you have discovered one use; there are several possible uses for each toy. The toys can be combined, if needed. Toy parts available from the SCIENCE MATERIALS CENTER, Library of Science, 59 - Fourth Avenue, New York 3, New York.

17. Ask questions such as these: "Is air real?" "How do you know?" Have the students prove their hypothesis or write why they do or don't think so. Allow experiments to find out.

18. Allow each child to select a special phase of interest to him and work out a project on it.

19. Have the children prepare experiments to prove a scientific principle and demonstrate them.

Social Studies

1. Try to find out various ways that men communicate with one another. Instigate this research by determining a social need for communication.

2. Divide your class into groups or teams. Each group pantomines some situation, pertaining to the country which the class is studying, for another group to write about. No discussions or spoken clues are given.

3. Use an opaque projector to present pictures, such as children from other countries, objects of art from other countries or economic conditions. Ask your class to compare and describe the items you have presented.

4. Compile statistics to use in making graphs or charts.

5. Create skits on the history, culture, ways of life, and so on, of people in other areas of the world.

6. Creative drama concerning areas being studied.

7. Think of ten man-made features on land.

8. Pretend you are a business man and you are contemplating opening a business in a country which you are studying. How would you develop or improve it?

9. Present a radio or T.V. newscast of any important events that are in the recent news.

10. Write a letter to someone telling them about your visit to a country which you are studying. (Imaginary)

11. Pretend to have a T.V. program interviewing some important person in the history of a country.

12. Use the tape recorder for recording imaginary interviews with natives of countries studied.

13. Present important events in a "You Were There" manner.

14. Write a few paragraphs on whether the student would like to visit the country under study and why.

CREATIVITY

7-12

* *

"CREATIVITY IS ADVENTUROUS THINKING"

A man practices the art of adventure when he:

. . . has the daring to open doors to new experiences and to step boldly forth to explore strange horizons.

. . . When he is unafraid of new ideas, new theories, and new philosophies.

. . . When he has the curiosity to experiment - to test and try new ways of living and thinking.

. . . When he breaks the chain of routine and renews his life through reading new books, traveling to new places, making new friends, taking up new hobbies and adopting new viewpoints.

. . . When he has the nerve to move out of life's shallows and venture forth into the deep.

. . . When he keeps his heart young, his expectations high and never allows his dreams to die.

. . . When he concludes that a rut is only another name for a grave and that the only way to stay out of ruts is by living adventurously and staying vitally alive every day of his life.

. . . This Week Magazine
October 8, 1961

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IDEAS FOR THE OLDER STUDENTS (7-12)

May, 1964

To Mr. McCrae and high school faculty:

Some time ago, at a faculty meeting, a challenge was thrown my way in your questions of the carryover of the identification and nurturing of creative students into the high school years.

The challenge was a greater one than I had realized. For, while my shelves are now virtually filled with literature on this subject, it is (take your choice) tragic, interesting, or intriguing to discover that virtually no research or program has been undertaken in this field within the high school area.

The pre-school and one-through-eight areas are well covered; there are colleges with a very high level of recognition and others varying down to very little significance. Taylor and others have researched deeply into the creative adults with emphasis on those in the sciences. But the high school area is a strange void in direct research.

Torrance points to the typical high school social studies teacher and a rating of the objectives most important in his discipline. The cognitive (recognize, realize, become aware of, become acquainted or familiar with, be conscious of) rated 71%; the convergent (behavioral norms, right attitude, right solution) rated 19%. These objectives, while certainly worthwhile, are often crushing blows to creativity. The DIVERGENT (independent thinging, constructive, creative, liberal, inquiring) received a 2% rating and its brother EVALUATIVE (critical thinking, assessing, selecting, comparing, judging, deciding) rated only 3%. The combination of DIVERGENT AND EVALUATIVE OBJECTIVES did not rate as high as MEMORY, the fifth objective given.

Elizabeth Drews divided gifted high school students in three groups: social leaders, studious achievers and creative individuals. The studious achievers always got the highest grades and the creative individuals the lowest. The studious achievers always studied the things that would earn good grades from the teacher. But in standard achievement tests, the creative individual often excelled both groups. (Among heterogeneous groups (not gifted) of Sutherlin, this was not found to be true; a large number of the most creative were found to be underachievers.)

What is the picture of the creative adolescent?

. . . He has an open attitude characterized by both passive receptivity and an active seeking.

. . . He revels in life, in aesthetic awareness, enjoys poetry, counterpoint of music, impact of graphic arts, reads poetry, will try to write it.

. . . He has catholic reading tastes with love for the off beat and non-required (and often a distaste for the required). He likes, for example, extra sensory perception, magic, hypnotism, witchcraft, etc. He will read while teachers teach.

. . . They like to consider many alternatives (again -- the divergent) and see the serious fallacy of oversimplications, one right answer, or only two sides -- right or wrong or yours and mine.

. . . They love free-range exploration, "fooling around with ideas even if they're useless", solving problems, puzzles, working with symbols and myths. They usually enjoy geometry and philosophy.

. . . They have a growing trust in themselves and refuse to accept the autocratic statement without critical examination. They'll disagree with classmates and teachers and will "stick up" for the student whose ideas are unpopular if these ideas make sense. They have courage to befriend an unaccepted classmate.

. . . They are always searching and reinterpreting. They like the unique or original approach.

. . . They are less tied to the group and to parents. They want to try new schools and visit new places. They want to face and explore the unknown.

. . . This picture by Drews makes it seem "of small wonder" that high school teachers often completely "miss the boat" in coping with and attempting to teach, help, or encourage these students.

However, if you think the picture is bleak for high schools, nothing could be further from the truth. For, as you know, the secondary area -- long dormant -- has emerged as the dynamic area of public education, far outstripping the former leaders in the lower grades. And with these new developments -- team teaching, varied class size, provisions for individual study, resource centers, independence in work, etc. -- comes the most natural nurturing of creativity one could hope for.

The ideas which follow are a few samples which may fit these "classes of tomorrow" and prove a great boon for the creative.

Sincerely,

Richard Scott

LANGUAGE ARTS

Perhaps there is no greater field for creative expression than that in language arts. Within the areas of speech, drama, writing are great numbers of possibilities for creative expression. An idea inventory might well be endless.

Two of the best compilations available are those provided by Howard E. Zimmerman of Eugene with his "'39' SUGGESTIONS TO STIMULATE 'CREATIVE WRITING'." Another is R. Stanley Peterson's list in "The English Journal" of December, 1961. Others are added as space permits.

The Zimmerman suggestions most applicable to secondary levels include:

1. Enrich the student's sensitivity to the world about himself and other people. Give him problems, situations, and suggestions which will stimulate his sensory, social and intellectual perception. Teach him to live "deeply" each experience. Suggest for him the distinction between specifics and generals; what is vague versus what is exact and intense.

2. Have the student read well and widely. He will get ideas, impressions, moods, emotions, et cetera almost without end. And that which is vicarious may be vital and intellectually alive and motivating.

3. Offer him both free and directed time with such devices as radios, tape-recorders, records with phonographs, pictures, et cetera. Allow him to explore his own potential through self-discovery.

4. Recognize and accept the contribution of each student as in someway praiseworthy; evaluate it on its merits; don't seek traditional identifications unless the student suggests them and wants to pursue them. After all, a "creative" product is different by its very nature.

5. Call attention to the peer-group as a source of things to write about: i.e. describing each other in different ways; recording unique observations of members of the peer age; interpreting individual or group actions of the peerage.

6. Seek out and encourage markets for publishing student works:
   a. Religious papers and magazines.
   b. School anthologies, papers, booklets, ceremonies, assemblies, et cetera.
   c. Class bulletin boards, papers, bulletins.
   d. Community bulletins, newspapers.
   e. Regional or national media.
   f. Contests and fairs, exchanges, "show-me's."

7. Write group materials. Ask each member to contribute something to the finished product. A common method is the group poem, where each student contributes a line, idea, or phrase which appears in the finished product. Other variations are story books, plays, radio scripts, papers, magazines, bulletins, etcetera.

8. Present part of a story and ask the students to finish it. Compare the various endings. Involve the student in the plot situations. Have him resolve the conflicts as he desires. Discuss why the resolution was stated that way.

9. Tell, write, and publish tall tales or yarns. The liars club is still stimulating and fun.

10. Write personal accounts, e.g. diaries, auto-biographies, impressions, descriptions, reflections, interpretations of dreams, et cetera. Stimulate spontaneous narrative.

11. Have word-selections contests. Search for words which fit the mood, color, meaning, et cetera. Question which is best, why? Ask what happened when the word is changed.

12. Analyze and compare literary works for ideas, moods, images, movement, rhythm, et cetera. Build a sense of and appreciation of comparisons as such.

13. Ask students to visualize unusual uses for common objects i.e. a brick, cork and needle, three matches, a dried prune, toilet paper cores, cigarette boxes, et cetera.

14. Call attention to the individual character of words. Are they learned? common? short? long? rhythmic? odd-sounding? harsh? liquid? crisp? How do they evolve? Why? What makes them emotive? symbolic?

15. Teach students to distinguish between realistic and false expression -- faith and fakery. Teach them that writers must be sincere. Give them examples of "playing false" in writing, e.g. affectation, straining, untruth, et cetera.

16. Provoke them with leading questions. What would you do on the moon? Is it possible to live under the sea? What is the power in a wave? What is outside the outside? What is a hermit crab? How high is up? Where is the mid-point of inbetween?

17. Stress "story sense" with them. Lead them through the complete story section by section. Show them the beginning, middle, and ending. Then contrast with some that are incomplete. Show how simplicity is often the setting for complexity, symbolism, and pervading ideas.

18. Explore "better ways to say it." Deal with matters of phrasing, compression-digression, juxta-position, inversion, variant orders, timing, et cetera.

19. Beguile those kids with bulletin boards, problems, diagrams, charts, objects to manipulate (clay, et cetera), buzz sessions (brainstorming), guest speakers, field trips, dramatizations, choral readings, -- ANYTHING acceptable to pique imagination and motivate to sincere expression. These can be presented casually throughout the course of a year. But keep them going (or coming?).

20. Give them a blank sheet of paper and ask them to fill it. Paper has a terrific pulling power for most folk, -- more so for creative ones.

21. Say, "Look out the window. It is (date). You will never see those trees or people just the same again. Write about them."

From the Peterson list:

1. Promote an exercise in class of noting movement, describing action, observing changes. Arrange with one member of the class to come in late, create a small sensation by what he says or does, and then take his seat in the classroom. Discuss with the class the actions observed. Note the errors in observation, and the omissions in details.

Offer as an assignment: Go back to the scene described in the previous paragraph. Describe (in one paragraph) the motion which you observe in the scene. Other motions to observe might be, the traffic on the highway, the sudden appearance of the principal, the moving clouds.

2. Draw two lines on the blackboard - two horizontal and parallel lines. If these lines represent two people walking down the street in opposite directions, show how nothing interesting happens unless those lines in some way intersect. Discuss with the class the forces that might make the lives of the two people come together. In other words, what will bring about some conflict between the two forces?

Offer as an assignment: Bring to class a list of three or four possible problems that might arise out of the scene created in a traffic jam, a disabled or overturned boat, an abandoned car. Be prepared to elaborate upon some events that might spring from each problem.

3. Call upon pupils to discuss characteristic actions of people they know. Let them concentrate on facial expressions, qualities of voice, movements of hands, peculiarities in walk, habitual actions.

Offer as an assignment: Observe a student in study hall, an animal moving in its cage, a teacher before the class. Come to class prepared to describe in words or in pantomine the actions which you have observed.

4. Words themselves appeal to the ear. They can give pleasure even when there is no apparent sensible meaning. Again, the search of the dictionary will result in a list of words that when read aloud give a pleasing sound. (or make up own words)

Offer as an assignment: Put the following words in a succession that is most pleasing to the ear. jaborandi, jacamar, jacaranda, jaw

5. The language of poetry is highly metaphorical, either by direct comparison or implication. Man is at one time or another all of the following animals - not entirely, of course, but partly - and it is this significant "partly" that is brought out by the direct or implied comparison. Man is a rooster, a donkey, an elephant, an ox, an ant, a dog, a lion, a fox, and each time he is something different.

Offer as an assignment: What is woman? What is spring? What is death? What is fear? What is kindness? What is honor? What is love?

*

From Mrs. Alice West, one of the teachers in the Sutherlin Program, comes this comment on the successful use of "What Is It?", an "Exercise in Elaborating" taken from INVITATIONS TO SPEAKING AND WRITING CREATIVELY by R.E. Myers and E. Paul Torrance.

"A page composed of a few suggestive lines; the directions to complete the lines into any object wished; and further space to jot down ideas about the drawing was handed each student. There were a few other suggestions such as: if it were an original animal or plant, to write of the best liked quality or ability, or anything particularly pleasing about it."

The purpose of the drawing and notes was to stimulate or motivate a continuation of the ideas into an organized story. There was enough appeal here for individual achievement so that although there were some few similarities in the drawings, there was a wide variety in them and in the stories.

The budding authors start from the same point, a few suggestive lines and provocative questions, but there is no comparison at all in the end product. Complete individuality may be expressed. Something may be created. Here, there need be no conformity to what he has read, or studied, heard, or to what other classmates are doing.

This proved to be an interesting series of lesson periods. Many were eager to show what had been drawn, and later to see and compare with ideas of classmates. The flushed faces, the quickened breathing, the glowing eyes, the excitement over some part of the drawing or story (in the creatively grouped class) gave evidence of some satisfying emotions of creativity.

The conformity and discipline of the project came with the re-copying, the polishing up with best-choice words, the final draft in ink making the completed story something to be proud to see as well as to hear.

Other ideas:

1. Make up new languages.

2. Make up coded messages.

3. Make jumbled sentences to be unraveled.

4. Use the library. Hand the students papers and say: "This is a test. You may use your own thinking, or any resource in the library. Here are the questions:

a. Is White a color?
b. Is Black a color?

5. Have students combine ideas and elements to produce something new:

a. Example - Think of a fantastic animal that never was; draw a picture of it; name it; describe it; explain its actions and habits.
b. Example - Describe a school that is entirely different from any school you have ever known.

6. Find meaningful associations between words. Example:

red . . . . . .beer
red sunset weather . . . cold beer

7. You have just finished reading a book. Assume the role of the author and have the class or a group of classmates interview you.

SOCIAL SCIENCE

Probably no field in education offers so great an opportunity for variety in approach than that offered in the social studies.

The sharp cleavage in instruction is that between the convergent and divergent approach, the former strongly favored by the high-i.q. adolescent and the latter by the highly creative adolescent.

Convergent thinking involves intellectual activity channeled toward a single answer that is assumed to be the only right "one." Divergent thinking is freedom to go off in different directions, to reject the single answer and to see others which also may satisfy the situation or even be superior.

The classic examples supplied by Getzels and Jackson are these:

Convergent -- "How did Sherman enter the city of Atlanta?" or "How was the South divided after the Civil War?"

Divergent -- "What might be different today if the South had won the Civil War?" or "How differently would the South have been treated if Lincoln had not been assassinated?"

(Incidentally, historians tell me there are now eight accepted causes for the Civil War. How many textbooks and teachers list but two (save the union-free the slaves) and develop convergent thinking leading only to these two?)

The following potpourri of concrete ideas may well serve to meet the needs of the creative and the needs for variety concurrently: (In all of these, take time to reflect on the unusual answer or approach before discouraging or passing by.)

1. The things I would do and think if I know what I know now but was living in:

   a. Example - Rome at the height of the Roman Empire
   b. Example - England in the Middle ages

2. What would happen if.....

   a. Example - a rich vein of gold was discovered beneath this high school.
   b. Example - we discovered the sun was dimming to the point of reducing average temperatures on earth by one degree a day.

3. Have a "panel of experts" study a topic with thoroughness and thought. The class will then be challenged to try to "stump" them on the topic.

4. Tape record an imaginary interview with a famous person out of history. One example would be an interview with Columbus as he returned from his first voyage.

5. Assign students to see a sample of a documented historical happening and a historically-based drama on TV. Have them analyze the difference.

6. Use quotations from famous documents as springboards for discussions.

7. A theme: "What Does Citizenship Mean to Me?" Follow with reading, discussing, criticizing. (Note the creative reaction to the Creative as compared with the reverse.)

8. Make a critical study of a newspaper to evaluate the news, know the difference between editorialized by-lined news stories and straight news. Study slants, the play of the news, the headlines and evaluate. This could lead into study of other news media.

9. Role-playing in a socio-drama permits an opportunity to see all sides of a question and to feel all sides. A couple of good dramatists can put a great deal into a reenactment of Appomattox, for example.

10. Have students write original stories with historical accuracy. Reflect upon the value and nature of the historical novel.

11. Sharing ideas in a buzz group and reporting to the class on its findings or opinions is always an interesting approach.

12. Write a radio report and/or commentary based on a newspaper story and analyze the differences.

13. Use "It's Hard to Believe..." as an interesting central theme for a review paper, a test, or a discussion. Example:

It's Hard to Believe That:

.....Some children at age four worked in textile mills of the early 1800's . Why?

.....In 1914 the shooting of one man started many nations choosing sides. What man?

14. A lesson in individual worth and the dignity of all kinds of honest endeavor: List the occupations of all fathers (and mothers?) of students in the room. Permit students to list the interdependencies involved as well as the importance of each occupation.

15. Seeing the funny side of history: As a part of other projects, an interesting sidelight can come from a whimsical approach through drawing, writing, and speaking. Examples: Make a cartoon map; draw and describe fashions of the day. (Creative student nearly always have a fine, <u>dry</u> sense of humor.)

16. Weekly presidential news conferences in which one student becomes president after reading extensively on the president's actions and thoughts of the week. Other students ask questions as reporters. Keep to time limit.

17. A full trial by jury could be prepared and staged within correct legal procedures with emphasis on rights. It could be presented as an assembly program.

18. A "Know Your Community" project or unit. Remembering that such a project was probably last used in the primary grades, this can stimulate much interest and be rewarding in many ways. It could be reproduced and used in the community and by the school.

19. It is said that 1/2 of the jobs today's elementary students will have when they are adults DO NOT EVEN EXIST today. Name and describe as many of these future jobs as you can.

SCIENCE AND MATHEMATICS

In the near past, it would have seemed that there was little potential within the science-math field to provide for the creative student. The one exception lay in the field of geometry, which usually has a strange fascination to the creative. But elsewhere, the "exactness" of mathematics and the deeply revered pure, scientific method of not so many years ago seemed to hold little hope for studies in creativity.

As noted by Dr. Taylor, the pure, scientific method is one of the greatest deterrents which drives the creative person out of the fields of sciences into the areas of liberal arts. And it is interesting to note that Werner Von Braun had great difficulty with mathematics as a child and was labeled "slow" in the German educational program.

The turn of events plays funny tricks and as all know, mathematics and science began turning all kinds of untried corners beginning in 1957. The result has been that many of these new avenues now hold a potential of great attraction to the creative. That attraction is founded primarily on the new-found status of the so-called "discovery" approaches, of the inductive, of the divergent.

Within the area of mathematics, for example, it is interesting to note that early research in the field of creativity advocated the very methods now being brought in with a great flurry as the "new arithmetic." With the crescendo which this new approach brings to education, it will be virtually impossible, within a few years to avoid the very arithmetical methods advocated for creative students years ago. (In this connection, it is interesting to note how many parents and teachers feel "threatened" by this new approach and how different is the reaction of most youngsters.)

Within the science classes, perhaps there is more resistance to the changing methods but certainly "discovery", induction, and the divergent is finding its way relentlessly. It was as one science teacher "capitulated" to the new thinking: "With the body of knowledge in science expected to double again and again in the space of a short time, much of what I may teach out of a textbook may be useless by the time my students are in adult life; but if I can just teach them how to think, how to approach problems in many different ways, they will then be able to adapt to the dizzy pace of new discoveries, new theories and change."

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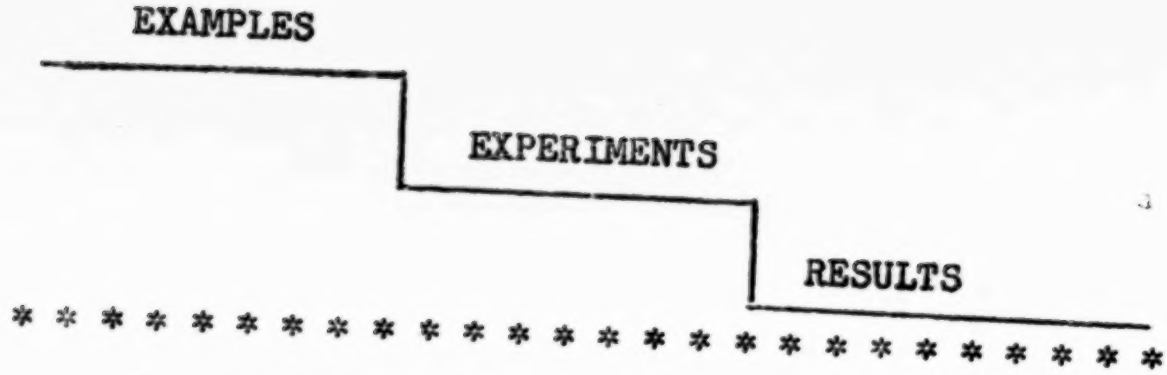

Represented on the following pages are a pot-pourri of examples. Included are successful approaches to the creative student - formal and informal - samples of some of the experiments used in comparing the creative classes with less creative students of equal or superior ability; some of the findings of the program and an interesting story about the reaction of others to a creative student's idea.

The classroom approaches include a play by two fifth graders and an illustrated story by a first grader. The play was a planned assignment but without pressure of time or demand. The class - a creatively grouped fifth grade. The assignment - to write a play about a map, a flashlight and a stick of gum. The illustrated story represents an example of a discerning teacher and the proper casual approach to the creative child.

Many experiments have been conducted, always spontaneously and often with visiting educators observing. The results have continuously pointed to the strange way in which creative students can, in certain areas, consistently outperform the less creative of equal or superior achievement, i.q. and scholastic record.

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THE MYSTERY MAP

Cast

Susan Dick

Story Teller

SCENE I

Time: Early Summer
Place: An old house

Story Teller: Dick comes running in the house and a door slams.

Dick: Susan! Susan!

Susan: Hi Dick! What's up?

Dick: (a rustle of paper) I found a treasure map!

Susan: A real treasure map! Let me see it!

Dick: Get the flashlight.

Susan: What do you want a flashlight for?

Dick: Because it leads to that old house on the hill.

Susan: O.K. Dick where is it?

Dick: It's in the car.

Story Teller: Susan went out to the car and looked for it. (Footsteps)

Susan: It's not in the car.

Dick: Then it's upstairs.

Susan: (Sounds like going upstairs) O.K. I have the flashlight.

Dick: O.K. come on.

Story Teller: They got to the house. It was dark and scary.

Susan: (Door creaking open) I-I d-d-don't want to go in.

Dick: Come on.

Susan: O.K.

Dick: Turn on the light. It says go upstairs and turn to the right. Then look in the top of the closet.

Story Teller: Susan held the light and Dick looked.

Dick: (Sound like a box being picked up) A box!

Susan: Bring it down.

Story Teller: Dick brought it down and opened it. There lay a stick of gum.

Susan: (Drop a box) Boy it wasn't worth it.

Dick: No it wasn't.

Susan: I wonder. Dick did you make the map?

- * -

SPONTANEOUS STORY

The following picture story was a product of the casual but discerning encouragement of the creative child within an informal classroom situation.

The girl - a talented and rapid working student - had finished her regular assignment and drew this story. When she had an opportunity, she showed it to the teacher, asking for help with the buffalo drawing. The teacher, recognizing the spontaneity, offered the help requested and showed interest as the girl told the story of her drawings. The teacher wrote the story exactly as told to her by the child, who, at the time, was in her fourth month of the first grade.

Bam-bam and the Rabbit

The Indians told Bam-bam that they would make him a chief if he would catch a rabbit. Bam-bam got his bow and arrow and rode his horse hunting for a rabbit.

Bam-bam found a rabbit and started to shoot it. A buffalo heard them and came running.

When the horse heard the buffalo he was frightened and ran; now he is called a chicken-horse.

1.

3.

2.

4.

A PROBLEM

Five men each of a different nationality, lived in a different colored house, drinks something different, smokes a different brand of cigarettes, owns a different animal.

Clues:

There are five houses in a row.
The Englishman lives in a red house.
The Spaniard has a dog.
The person who lives in the green house drinks coffee.
The Ukranian drinks tea.
The green house is just to the right of the ivory house.
The man who smokes Old Golds owns snails.
Kools are smoked in the yellow house.
The man in the middle house drinks milk.
The Norwegian lives in the first house.
The Chesterfield smoker lives next to the man with a fox.
The man who smokes Kools lives next to the man who owns a horse.
The Lucky Strike smoker drinks orange juice.
The Japanese smokes Parliaments.
The Norwegian lives next to the blue house.

Which man drinks water?

Which man owns a zebra?

EXPERIMENTAL USE OF PROBLEM

This problem was given us by a friend when it appeared in the Medford Mail-Tribune and prior to the time it was later published in the Reader's Digest.

Two special classes were formed. One class contained all of the top students in the junior high school except five who were also very high on creative tests. The second class contained only those with high creative ability without attention to grades or i.q.

The problem was given to both groups.

One creative student had the answer in 10 minutes. Four creative students had the answer before any of the top group had the answer and ultimately five creative students solved the problem within 50 minutes while three of the top group had the correct answer.

But the most discerning of all was the girl at the top of the school in creative factors, a girl who had completed a year in the 7-3 program. Her answer was "Who said that there was a man who drank water or a man who owned a zebra?"

Well, who did?

ODD MATH EXPERIMENT

The following experiment was conducted within the eighth grade control group.

An off-the-top-of-the-head jumbled number system was worked out: 1 is 9; 2 is 8; 3 is 7; 4 is 6; 5 is so; 6 is 4; 7 is 3; 8 is 2; 9 is 1 and 0 is do.

The system was written on the board and many problems such as these examples were given:

If a man walked so miles in one hour, rested one hour and a half, then walked 6do miles farther at the same rate, how much time had passed?

What number is this? 43do,sosol

Among the students matched (control) for i.q., achievement and grades, the creative of the matched pairs answered approximately 3 for every one answered by the non-creative member of the pair.

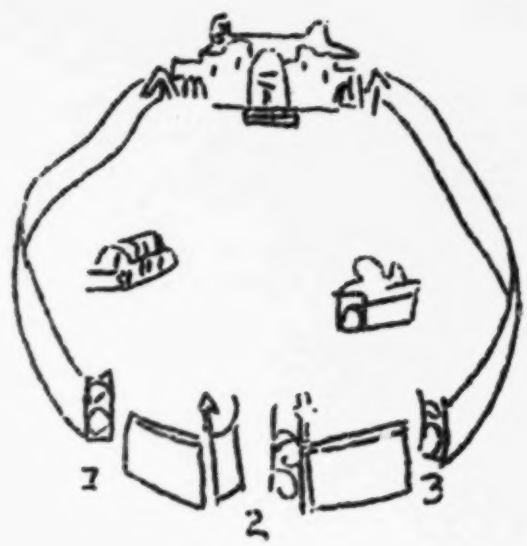
- * -

Using this classic puzzle (see answer on later page) in the 8th grade control class and allowing approximately 12 minutes to reach an answer, the creative achieved 75% or 3 of the 4 correct answers within the matched pairs and 64% within the 11 correct answers in the room.

Three neighbors who were forever fighting with one another lived in a small park enclosed by a wall. The neighbors decided that the only way to keep peace would be to build private pathways leading out of the park.

The family living in the large house made a private path leading to gate number 2. The family living in the house on the left made a private pathway leading to gate number 3. And the family living in the house at the right built a private path leading to gate 1.

The paths did not cross each other. How were they made?



TEST SCORES -- CONTROL GROUP

Stanford achievement tests given to the 8th grade control group failed to disclose any marked statistics pertaining to this area.

While in the directly controlled group, the creative controls outachieved the non-creative control students, 17-12 in the areas of Reading, Arithmetic, Social Studies, Science and Language, other scores indicated the same slight trend to the non-creative.

Within the group, there was no particular effort on the part of the instructors to make the class any different or to experiment. Rather it was their intent to observe the two groups.

Some of the information given by these teachers was:

1. The highest and lowest grades in the class are those of the creative students.
2. The creative students tend to dominate discussion.
3. The class provided an interesting division and the teachers would like another year to extend experimentation.
4. The students selected as the top academic student, the student with the most unusual ideas, the discussion leader, the student most difficult to reach and the student most upsetting to the class were all creative students.

While there appeared to be a few encouraging signs with the newest class grouping, certainly there were not the marked comments that are received from teachers dealing with the all-creative seventh grade class.

It would seem that the direction to be taken by this class should be more dramatic in providing:

1. More grouping in projects with the more creative in one group and the less creative in another.
2. More records kept of students and their reaction to and accomplishments in:

    a. Work calling for divergent thinking.
    b. Work of fact-recalling type
    c. Individual, independent work
    d. Class lock-step work

3. Following a complete pattern geared to the creative student (on class basis) for one unit, and
4. Follow a complete pattern geared to the conventional or less creative student (on class basis) for another unit.

AN INTERESTING STORY

It was some five years before I came to Sutherlin that a second elementary school was built in this then booming community.

School officials and city leaders felt it would be a stimulating idea to have a community contest to name the two schools. So the contest was arranged and many entries poured in. The judges pondered and finally announced the winning names: East School and West School.

Some 10 years later, the district razed its old junior high school building and built a beautiful new structure. It was some time near the completion of this that a student came to me and enthusiastically presented an idea for naming the new school, The John Glenn Junior High School. She had read of the fine background and wonderful character of this astronaut and felt it appropriate. I suggested she write a letter to the school board with her idea and reasons. She did and the board accepted it with a great deal of appreciation.

Meanwhile at the school other students were hard at work. They had heard of the girl's idea. Leaders drew up a petition and most of the students signed this petition in violent opposition to naming the school, John Glenn Junior High School.

Think about this: the students and everyone concerned had accepted East and West as outstanding names but now they were in violent opposition to naming another school for a very fine American representative of the space age -- a name which seemingly could never be a discredit to the school or community.

It didn't make sense until you looked at the girl suggesting it. In our first grouping of 7th grade students of high creative ability, she had been at the top of the list both in teacher rating and in the creative test score.

And herein lies the solution for: "The uncreative status-quo-directed children INVARIABLY unite to humiliate, contradict and ultimately banish the creative child who comes up with a new, original but to them a threatening idea."

. . . Richard Scott
Speaking in Portland, Ore.

EXPERIMENT

Two groups were selected -- one including five honor students but with low creative ratings and the other including a variety of creative students without regard for any other factor.

They were given five minutes to see what they could do with these items if stranded on an unknown island: a 10' piece of string, a piece of colored glass, a pencil, an old tire, a rubber ball, a ring on the finger and a light bulb.

After five minutes, the honor students (working together and exchanging ideas) gave these ideas:

1. Make a fishing pole out of the string, a tree branch with the ring (broken) for a hook.
2. Use the tire and trees to make a signal fire.
3. Use the wire inside the tire for a snare.
4. Use the light bulb to start a fire.
5. Use the wire inside the tire for a fish trap.
6. Write a message on the ball and throw it in the water.
7. Use the colored glass for a knife.

The creative group reported:

1. Fish with the string.
2. Use the glass for making fire and for cutting and to make signals for communication.
3. Use the pencil to keep a log or for a weapon.
4. Use the old tire to cook in and for entertainment.
5. Use the ring for a fish hook or weight or for signals.
6. Use the light bulb for a took, a weapon, a cooking utensil and the wire inside for a hook.
7. Use the piece of glass to evaporate salt water to get salt.

COMMENTS: NONE

UNUSUAL USES EXPERIMENT

Several times, the experiment has been made of competing the creative group against the honor student group in naming the number of uses for an item or in seeing unusual relationships between two items. This has been used spontaneously when visitors have come to the Sutherlin schools.

Example: Tell the uses that could be made of a broken piece of glass.

Example: (classic) What relationships are there between Coca Cola and a forest fire.

The students are called upon as hands go up and until all ideas seem exhausted.

WITHOUT EXCEPTION the creative students have many more ideas and carry the theme much longer than do the honor student group.

AN ENCOURAGING NOTE

From Richard Yurk, head of the Sutherlin school system's testing program came a report on the two students ranking 1-2 in Iowa Achievement scores among the freshman class of more than 100. The two students, mediocre, slighly above average in the intermediate grades, had rated out of the top 20 per cent entering junior high school. They were products of the first creative class at the 7th grade level and as their parents had given credit, they "took off" during and following their experience with this creative grouping, hurdling over the top of the so-called "high" group into the top ranks of achievement and to honor roll status in high school.

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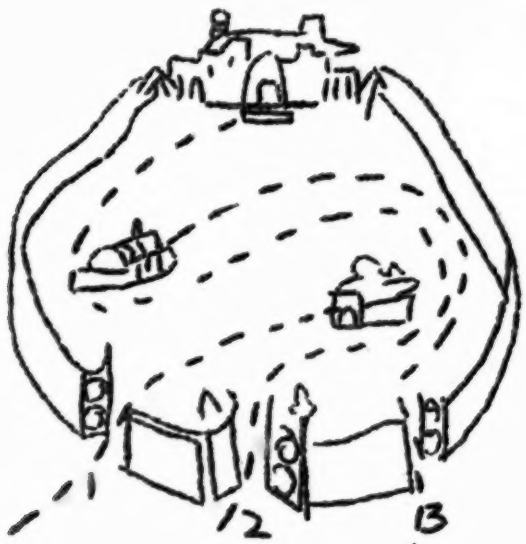

Solution for puzzle found elsewhere in book.

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"The average classroom teacher, faced with the need to instruct simultaneously a large number of students usually has been inclined to stress convergent thinking which arrives at the "one right answer." We must also provide the conditions which will help teachers to encourage divergent thinking -- the type of mental activity which spells resourcefulness in meeting our problems."

. . . U.S. Department of Education